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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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William S. Adney

NREL 99-45

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EXAMINER

PATTERSON, CHARLES L JR

ART UNIT

PAPER NUMBER

1652

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/031,496

Applicant(s)

ADNEY ET AL.

Examiner

Charles L. Patterson, Jr.

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1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-16 and 18-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 6-16 and 18-26 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/28/05 has been entered.

Applicants previously claimed a nucleic acid molecule encoding a variant cellobiohydrolase mutated with respect to a wild-type enzyme comprising a linker region between a catalytic domain and a cellulose binding domain. There were specific claims drawn to nucleic acids comprising a sequence change encoded by SEQ ID NO:20-22 or 83, 85 and 87. The claims now pending are drawn to mutating SEQ ID NO:5 with a multitude of specific changes. This entails a much more complicated search involving a multitude of specific amino acid changes that were not previously prosecuted. It is noted that SEQ ID NO:5 was not in any of the previous claims and furthermore the sequence is not defined in the specification as to its identity in the specification as required by 37 CFR § 1.821-1.825. Also at least SEQ ID NO:2 in the instant claims is not defined in the specification and apparently other sequences not in the claims. These sequences must be defined in the specification as required by 37 CFR § 1.821-1.825.

Because the application now claims a multitude of separate and distinct inventions, a restriction is being done.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

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1. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 8, classified in class 536, subclass 23.2.
2. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 27, classified in class 536, subclass 23.2.
3. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 43, classified in class 536, subclass 23.2.
4. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 75, classified in class 536, subclass 23.2.
5. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 94, classified in class 536, subclass 23.2.
6. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 190, classified in class 536, subclass 23.2.
7. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 195, classified in class 536, subclass 23.2.
8. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 287, classified in class 536, subclass 23.2.
9. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 299, classified in class 536, subclass 23.2.

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10. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 312, classified in class 536, subclass 23.2.
11. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 315, classified in class 536, subclass 23.2.
12. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 359, classified in class 536, subclass 23.2.
13. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 398, classified in class 536, subclass 23.2.
14. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 401, classified in class 536, subclass 23.2.
15. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 414, classified in class 536, subclass 23.2.
16. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 431, classified in class 536, subclass 23.2.
17. Claims 6-8, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting proline at position 433, classified in class 536, subclass 23.2.
18. Claims 6-7, 9, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting

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tuting arginine at position 64, classified in class 536, subclass 23.2.

19. Claims 6-7, 9, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting arginine at position 337, classified in class 536, subclass 23.2.
20. Claims 6-7, 9, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting arginine at position 327, classified in class 536, subclass 23.2.
21. Claims 6-7, 9, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting arginine at position 405, classified in class 536, subclass 23.2.
22. Claims 6-7, 9, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting arginine at position 410, classified in class 536, subclass 23.2.
23. Claims 6-7, 9, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting aspartic acid at position 64, classified in class 536, subclass 23.2.
24. Claims 6-7, 9, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting aspartic acid at position 337, classified in class 536, subclass 23.2.

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25. Claims 6-7, 9, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting aspartic acid at position 327, classified in class 536, subclass 23.2.
26. Claims 6-7, 9, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting aspartic acid at position 405, classified in class 536, subclass 23.2.
27. Claims 6-7, 9, 11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting aspartic acid at position 410, classified in class 536, subclass 23.2.
28. Claims 6-7, 10-11, 13-14, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting glycine a position 99, classified in class 536, subclass 23.2.
29. Claims 6-7, 11, 13-14, 19, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by deleting from the group consisting of position 99-101, classified in class 536, subclass 23.2.
30. Claims 6-7, 11, 13-14, 19, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by deleting from the group consisting of position 278-279, classified in class 536, subclass 23.2.
31. Claims 6-7, 11, 13-14, 19, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by deleting

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from the group consisting of position 387, classified in class 536, subclass 23.2.

32. Claims 6-7, 11, 13-14, 20, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting cysteine of position 197, classified in class 536, subclass 23.2.
33. Claims 6-7, 11, 13-14, 20, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting cysteine of position 370, classified in class 536, subclass 23.2.
34. Claims 6-7, 11-14, 21, 24, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting a non-glycosyl accepting amino acid at position 45, classified in class 536, subclass 23.2.
35. Claims 6-7, 11-14, 21, 24, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting a non-glycosyl accepting amino acid at position 270, classified in class 536, subclass 23.2.
36. Claims 6-7, 11-14, 21, 24, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting a non-glycosyl accepting amino acid at position 384, classified in class 536, subclass 23.2.
37. Claims 6-7, 11, 13-14, 22, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting alanine at position 45, classified in class 536, subclass 23.2.



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38. Claims 6-7, 11, 13-14, 22, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting alanine at position 270, classified in class 536, subclass 23.2.
39. Claims 6-7, 11, 13-14, 22, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting alanine at position 384, classified in class 536, subclass 23.2.
40. Claims 6-7, 11, 13-14, 22, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting alanine at position 384, classified in class 536, subclass 23.2.
41. Claims 6-7, 11, 13-14, 23, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting alanine at position 252, classified in class 536, subclass 23.2.
42. Claims 6-7, 11, 13-14, 23, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting alanine at position 294, classified in class 536, subclass 23.2.
43. Claims 6-7, 11, 13-14, 23, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting alanine at position 338, classified in class 536, subclass 23.2.
44. Claims 6-7, 11, 13-14, 23, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting alanine at position 338, classified in class 536, subclass 23.2.

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tuting alanine at position 267, classified in class 536, subclass 23.2.

45. Claims 6-7, 11, 13-14, 23, 24, 26, drawn to a nucleic acid encoding a variant cellobiohydrolase that has been mutated by substituting alanine at position 385, classified in class 536, subclass 23.2.

46. Claims 15-16 and 18, drawn to an exoglucanase comprising the sequence change encoded by SEQ ID NO:20 or 21, classified in class 536, subclass 23.2.

The inventions are distinct, each from the other because:

Each of inventions 1-46 are drawn to different nucleic acids that have a different sequence and are structurally different.

It is noted that claim 25 is not included in the restriction requirement because it depends upon claim 1, which claim has been deleted.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

The examiner has made a concerted effort to include all of the claims within the appropriate group, but because of the complexity of the instant restriction requirement he might have included some of the claims in the

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wrong group. Applicants are asked to correct any obvious errors in this regard.

Because of doing the instant restriction requirement, the other pending rejections are not commented on here. The examiner will comment on these aspects of the invention when he does a non-final action of the merits upon receipt of the election of a group by applicants.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles L. Patterson, Jr., PhD, whose telephone number is 571-272-0936. The examiner can normally be reached on Monday - Friday from 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, can be reached on 571-272-0928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Charles L. Patterson, Jr.  
Primary Examiner  
Art Unit 1652

Patterson  
October 7, 2005